

CLAIMS

- 1 1. A moveable pallet for firmly holding a surgical stapling cartridge as drivers are
2 inserted therein, the pallet comprising:
 - 3 (a) a base having a lower surface for seating on a conveyer; and
 - 4 (b) means mounted on an upper surface of the base for gripping the cartridge.
- 1 2. A moveable pallet firmly holding a surgical stapling cartridge as drivers are inserted
2 therein, the pallet comprising:
 - 3 (a) a base having a lower surface seating on a conveyor; and
 - 4 (b) means mounted on an upper surface of the base gripping the cartridge.
- 1 3. A moveable pallet for firmly holding a surgical stapling cartridge as drivers are
2 inserted therein, the pallet comprising:

3 (a) a base having a lower surface for seating on a conveyor, and an upper surface
4 having an elongated cartridge region;

5 (b) a first cartridge-retaining lip member movably mounted to the base on a first
6 side of the cartridge region, said first lip member being biased toward the
7 cartridge region and having a lip extending from the lip member into the cartridge
8 region; and

9 (c) a second cartridge-retaining lip member mounted to the base on a second side
10 of the cartridge region, said lip member having a lip extending from the lip
11 member into the cartridge region.

1 4. The pallet in accordance with claim 3, wherein the cartridge region is an elongated
2 slot formed between the lip members for holding the cartridge.

1 5. The pallet in accordance with claim 4, wherein the second cartridge-retaining lip
2 member is movably mounted to the base and biased toward the slot.

1 6. The pallet in accordance with claim 5, further comprising a gap formed between the
2 first and second lip members and adapted to receive a tongue that is inserted upwardly
3 through an aperture in the base and seating against opposing surfaces of the lip members
4 and displacing the lip members away from the slot.

1 7. The pallet in accordance with claim 5, further comprising a finger mounted to the base
2 near a first longitudinal end of the slot, said finger extending upwardly from the base for
3 seating in a recess of said cartridge.

1 8. The pallet in accordance with claim 7, wherein the lip members are slidably mounted
2 within chambers formed in the base.

1 9. The pallet in accordance with claim 8, further comprising chamber cover panels
2 mounted to the base over the chambers, said chamber cover panels having upper surfaces.

1 10. The pallet in accordance with claim 9, wherein said cover panel upper surfaces define
2 seating surfaces for seating against stops and vertically positioning the pallet.

1 11. The pallet in accordance with claim 7, further comprising at least one tapered cavity
2 formed in the lower surface of the base for receiving a tapered tip and horizontally
3 positioning the pallet.

1 12. A moveable pallet for firmly holding a surgical stapling cartridge as drivers are
2 inserted therein, the pallet comprising:

3 (a) a base having a lower surface for seating on a conveyor;

4 (b) an elongated slot formed in an upper surface of the base for holding the
5 cartridge;

6 (c) a first cartridge-retaining lip member movably mounted to the base on a first
7 side of the slot, said first lip member being biased toward the slot and having a lip
8 extending into the slot;

9 (d) a second cartridge-retaining lip member movably mounted to the base on a
10 second side of the slot, said second lip member being biased toward the slot and
11 having a lip extending into the slot;

12 (e) a gap formed between the first and second lip members and adapted to receive
13 a tongue inserted upwardly through an aperture in the base, for seating against
14 opposing surfaces of the lip members and displacing the lip members away from
15 the slot; and

16 (f) a finger mounted to the base near a first longitudinal end of the slot, said finger
17 extending upwardly from the base for seating within a recess of said cartridge.

1 13. The pallet in accordance with claim 12, further comprising first and second chambers
2 formed in the base on the first and second sides of the slot, respectively, said first and
3 second chambers housing the first and second lip members, respectively.

1 14. The pallet in accordance with claim 13, further comprising at least one tapered cavity
2 formed in the lower surface of the base for receiving a foot for positively positioning the
3 pallet horizontally.

1 15. The pallet in accordance with claim 14, further comprising at least one vertical
2 registration surface for seating against at least two registration arms for positively
3 positioning the pallet vertically.

1 16. The pallet in accordance with claim 15, further comprising chamber cover panels
2 mounted to the base over the chambers, wherein upper surfaces of the cover panels
3 comprise said at least one vertical registration surface.

1 17. A tool for picking up a frame to which a plurality of drivers for a surgical stapling
2 cartridge is mounted, the tool comprising:

3 (a) a prime mover;

4 (b) a first finger drivingly linked to the prime mover, the first finger having a first
5 pair of transverse planar panels formed in an inwardly facing surface of the first
6 finger, the first pair of transverse planar panels adapted to seat against
7 corresponding surfaces on the driver frame; and

8 (b) a second finger connected to the prime mover, the second finger having a
9 second pair of transverse planar panels formed in an inwardly facing surface of

10 the second finger that is substantially opposed to the inwardly facing surface of
11 the first finger, the second pair of transverse planar panels adapted to seat against
12 corresponding surfaces of the driver frame.

1 18. The tool in accordance with claim 17, further comprising a first pair of substantially
2 parallel planar panels intersecting the first pair of transverse planar panels near an end of
3 the first pair of transverse planar panels.

1 19. The tool in accordance with claim 18, further comprising a second pair of
2 substantially parallel planar panels intersecting the second pair of transverse planar
3 panels near an end of the second pair of transverse planar panels.

1 20. The tool in accordance with claim 19, wherein the prime mover is an
2 electromechanical transducer.

1 21. The tool in accordance with claim 19, further comprising the frame to which the
2 plurality of drivers is mounted, said frame being clampingly gripped between the first and
3 second fingers.

1 22. A tool for picking up a frame to which a plurality of swing tabs for a surgical
2 stapling cartridge is mounted, the tool comprising:

3 (a) a prime mover;

4 (b) a first finger drivingly linked to the prime mover, the first finger having a first
5 pair of transverse planar panels formed in an inwardly facing surface of the first
6 finger, the first pair of transverse planar panels adapted to seat against
7 corresponding surfaces on the swing tab frame; and

8 (b) a second finger connected to the prime mover, the second finger having a
9 second pair and a third pair of transverse planar panels formed in an inwardly
10 facing surface of the second finger that is substantially opposed to the inwardly
11 facing surface of the first finger, the second and third pairs of transverse planar
12 panels adapted to seat against corresponding surfaces of the swing tab frame.

1 23. The tool in accordance with claim 22, further comprising a fourth pair of transverse
2 planar panels formed in an inwardly facing surface of the first finger, the fourth pair of
3 transverse planar panels adapted to seat against corresponding surfaces on the swing tab
4 frame.

1 24. The tool in accordance with claim 23, further comprising a first pair of substantially
2 parallel planar panels intersecting the first and fourth pairs of transverse planar panels
3 near an end of the first and fourth pair of transverse planar panels.

1 25. The tool in accordance with claim 23, further comprising a second pair of
2 substantially parallel planar panels intersecting the second and third pairs of transverse
3 planar panels near an end of the second and third pairs of transverse planar panels.

1 26. The tool in accordance with claim 25, wherein the prime mover is an
2 electromechanical transducer.

1 27. The tool in accordance with claim 25, further comprising the frame to which the
2 plurality of swing tabs is mounted, said frame being clampingly gripped between the first
3 and second fingers.

1 28. The tool in accordance with claim 25, wherein the first and second fingers are forked
2 to form legs, each of which has one of said pairs of transverse panels formed therein.

1 29. A method of filling a surgical stapling cartridge with drivers, the method comprising:

2 (a) holding firmly a cartridge in a pallet, the pallet comprising:

3 (i) a base having a lower surface seating on a conveyor; and

4 (ii) means mounted on an upper surface of the base gripping the cartridge;

5 (b) raising the pallet above the conveyor to a machine for inserting drivers;

6 (c) said machine inserting a plurality of drivers into the cartridge when the pallet
7 is in a raised position; and

8 (d) lowering the pallet onto the conveyor.

1 30. The method in accordance with claim 29, further comprising the step of a robotic
2 arm loading the machine with said plurality of drivers.

1 31. The method in accordance with claim 30, further comprising the step of a central
2 computer connected to said robotic arm actuating said robotic arm.

1 32. The method of claim 29, further comprising the steps of:

2 (a) conveying the pallet to a first station on the conveyor, said first station being
3 where the machine is positioned; and then

4 (b) conveying the pallet to a second station on the conveyor.

1 33. The method in accordance with claim 32, further comprising the step of inserting at
2 least one tapered foot into at least one tapered cavity on the lower surface of the base,
3 thereby horizontally registering the pallet relative to the machine.

1 34. The method in accordance with claim 33, further comprising the step of raising an
2 upper surface of the pallet into abutting engagement against at least one downwardly
3 facing surface of an arm, thereby vertically registering the pallet relative to the machine.